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ABSTRACT

A laser doping process comprising: irradiating a laser beam operated in a pulsed mode to a single crystal semiconductor substrate of a first conductive type in an atmosphere of an impurity gas which imparts the semiconductor substrate a conductive type opposite to said first conductive type and incorporating the impurity contained in said impurity gas into the surface of said semiconductor substrate, thereby modifying the type and/or the intensity of the conductive type thereof. Provides devices having a channel length of 0.5 μm or less and impurity regions 0.1 μm or less in depth.